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ABSTRACT

Cognitive-based approaches to social and personality psychology have studied the structure of trait constructs in memory. The bipolar view of traits suggests that the activation of a trait construct such as "hostile" should be associated with the simultaneous activation of its semantic opposite "kind." The unipolar view, in contrast, can be summarized in terms of construct activation, but not activation of the construct's opposite semantic associates in the referent cognitive structure. A study was conducted to examine the representation and span of accessible trait constructs and, in particular, trait construct polarity. Undergraduates (N=43) completed a construct accessibility measure and, one month later, completed behavior generation and evaluative ratings tasks. Complete data were analyzed from subjects (N=34) who generated examples of behaviors describing people who had certain traits in the behavior generation task, and subjects (N=39) who rated the extent to which various statements were typically true or not true of themselves in the evaluative ratings task. The results generally support a bipolar trait representation across tasks. An important exception to this finding was obtained for positively valenced constructs in the behavior generation task. The results suggest that task may influence the structure of accessible trait constructs such that more complex processing leads to more polarized trait conceptions. Further, valence may impact on information elaboration about accessible trait constructs. (NB)

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Polarity of Accessible Constructs Varies As a Function of Task

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Abstract

Cognitive-based approaches to social and personality psychology have studied the structure of trait constructs in memory. In the present study, we focus on the representation and span of accessible trait constructs. In particular, we address trait construct polarity. For example, does activation of a trait construct of "hostile" also imply the simultaneous activation of a corresponding antonymous construct such as "kind," implying a bipolar representation? Using both a behavior generation task and a rating task for accessible constructs, results generally support a bipolar trait representation across tasks. An important exception to this finding was obtained for positively valenced constructs in the behavior generation task. The results suggest that task may influence the structure of accessible trait constructs such that more complex processing leads to more polarized trait conceptions. Further, valence may impact on information elaboration about accessible trait constructs.

Polarity of Accessible Constructs Varies As a Function of Task

Researchers have made varying assumptions regarding the structure and span of trait constructs. Although much theoretical and empirical work is based on a notion which views traits as bipolar entities (e.g., Kelly, 1963; Wiggins, 1979; Wiggins & Broughton, 1985), other work appears to imply a unipolar representation of traits (e.g., Higgins & King, 1981; Srull & Wyer, 1979; Wyer & Srull, 1981).

The bipolar view of traits is fundamental for a great deal of work in personality. This view suggests that the activation of a trait construct such as "hostile" should be associated with the simultaneous activation of its semantic opposite "kind" (and perhaps synonyms of "kind"). The bipolar characterization can be contrasted with a unipolar perspective found, for example, in recent research on construct accessibility in social cognition. This unipolar assumption can be summarized in terms of construct activation (and, perhaps, its synonyms under the assumptions of spreading activation models (e.g., Anderson, 1983; Collins & Loftus, 1975)), but <u>not</u> its polar opposite and/or antonymous semantic associates in the referent cognitive structure.

In this study, we test hypotheses about the cognitive representation of trait constructs. We extend previous research which has taken place primarily in the context of the Osgood, Suci, and Tannenbaum (1957) semantic differential scale (cf., Bentler, 1969; Green & Goldfried, 1965) by: (1) considering multiple measures (a ratings and behavior generation task) and (2) examining only central and unique attributes used by subjects as assessed by their "chronic" accessibility.

Method

Subjects and Preliminary Stimulus Preparation

Participants were 43 undergraduates, 17 to 22 years old who received partial course credit and participated with informed consent.

One month prior to the experiment, students completed the construct accessibility measure described in Higgins, King, and Mavin (1982). The measure requires subjects to list up to ten trait adjectives describing persons they like, dislike, seek out, and avoid. Only the first-listed trait for each category is considered to be an "accessible" construct for that subject (cf., Higgins et al., 1982).

The accessible constructs in each category were compiled for each subject. Two independent raters then generated the antonyms for the four constructs (according to a prepared set of coding rules), leaving each subject with a total of eight words (the set of four trait constructs provided by the subject from the like, dislike, seek out, and avoid categories and their antonyms which were provided by the raters). Subjects were then quasi-yoked to another subject's accessible constructs and antonyms in the behavior generation task and two other subjects' constructs and antonyms in the ratings task.

At the experimental session, subjects were matched to the previously obtained information and completed two tasks: behavior generation and evaluative ratings (counterbalanced for order).

I. Behavior Generation.

Sixteen trait words served as stimuli in the behavior generation component of the study. They were the subject's own set of eight words

(four constructs and four antonyms) quasi-yoked with another subject's set of eight words (four constructs and four antonyms). Subjects generated behaviors for both their own constructs and the non-overlapping constructs of another subject. Stimulus words were arranged in random order. Traits were substituted into the sentence stem: "People who are <trait> tend to:" and were followed by a page of numbered blank entries.

II. Ratings.

Twenty-four stimulus trait words were used in this section. Of these 24 words, eight were either the words listed on the accessibility measure or their antonyms. These were quasi-yoked to 16 words given by two other subjects. The 24 trait words were put in random order. Each word (and the evaluative category from whence it came, i.e., like, dislike, seek out, or avoid) was substituted in the sentence, "I tend to <evaluative category> people who are <trait>," and each sentence was followed by a seven-point Likert scale (1 = "strongly disagree" to 7 = "strongly agree").

Procedure.

Students were run in small group sessions lasting one hour. They were told that they would be making judgments about how certain people behave. When subjects arrived, they received their own packet of stimulus materials containing their uniquely specified set of words. They were told to read the general directions, read and sign the consent form, and wait for further direction from the experimenter.

Subjects then generated examples of behaviors describing people who have certain traits (e.g., "People who are <friendly> tend to:") in one section, while in the other, they rated the extent to which various

statements are typically true or not true of them (e.g., "I tend to <seek out> people who are <shy>."). In both parts of the study, subjects were given a standardized time period (two minutes) in which to do each problem within each task.

Expected Results under Varying Assumptions of Trait Constructs Polarity

In the behavior generation section under the assumption of bipolarity, subjects should be able to generate as many behavioral exemplars for a given construct as for its antonym, since a construct and its antonym should be linked. Unipolarity would suggest that more behavioral exemplars would be generated for a construct than for its antonym, particularly for the accessible constructs used in this study.

Construct polarity in the ratings section may be considered by examining the extremity of ratings for constructs and antonyms. Since a unipolar characterization of traits implies differential (and separate) consideration of constructs and their antonyms, there should be no relation between the a construct rating and its antonym rating in terms of extremity. If a bipolar representation for constructs holds, then ratings of constructs and antonyms should be linked, and no difference should exist between extremity of construct ratings relative to antonym ratings.

Results

Analyses were based on complete information provided in all 16 cells of the design, leaving 34 subjects in the behavior generation section of the experiment and 39 subjects in the ratings section. Results based on subject-match hypotheses are not reported here, but are available on request.

I. Behavior generation.

Data were analyzed using a four (Evaluative dimension --like, dislike, seek out, avoid) X two (Semantic category --construct or antonym) X two (Source of words -- subject or match) MANOVA. The dependent variable in this section is the frequency count of exemplars that a subject listed for each of the sixteen trait words in response to the sentence stem "People who are <trait> tend to:."

A statistically significant main effect for the semantic category factor was obtained (F (1,33) = 19.58; p < .001; eta squared = .37). Subjects generated more examples for sentence stems with constructs than they did for the stems that contained antonyms.

The obtained main effect, which favors the unipolarity hypothesis, is moderated by a statistically significant evaluative dimension by semantic category interaction (F (3, 31) = 3.53, p < .02; eta squared = .25). Post hoc tests show that significant differences between construct and antonym means occur only for the "like" and "seek out" evaluative categories (t (33) = 2.94, p < .001, eta squared = .21 for "like"; t (33)= 3.70, p < .001, eta squared = .29 for "seek out"), but not for the "dislike" and "avoid" categories (t (33) = 1.03, p = .16 for "dislike"; t (33) = 0.15, p = .44 for "avoid"). Thus, results consistent with bipolarity were obtained for negatively valenced categories ("dislike" and "avoid"). A unipolar result was obtained for positively valenced categories ("like" and "seek out").

Insert Table 1 about here

II. Ratings

To assess whether rating extremity differed between constructs and antonyms, empirical midpoints were used as "better" approximations of the "real" psychological midpoint employed by subjects in their ratings. For each construct-antonym set, extremity was computed by measuring the absolute discrepancy of ratings for both constructs and antonyms from the empirical midpoints for each subject and differencing these two quantities.

Data were analyzed as a four (Evaluative category --like, dislike, seek out, avoid) X two (Source -- subject or match) within-subjects design. Recall that the extent to which a construct and its antonym differ is given by the magnitude of the extremity. That is, large deviations from the midpoint in either a positive or a negative direction are consistent with a unipolar structure, whereas near-zero values are consistent with a bipolar structure.

The critical hypothesis of unipolarity/bipolarity is evaluated by the statistical significance of the overall grand mean (i.e., is the grand mean zero?). Unipolarity is demonstrated if this effect is non-zero. The effect is not statistically significant (F (1,35) = 0.27, p = .61), supporting the bipolarity hypothesis. To check whether sufficient statistical power was available to support unipolarity, a power analysis was performed, revealing that power of approximately .74 was available to test this effect at an alpha of .10 (postulating a "medium" effect; cf.,

Cohen, 1977, p. 413).

Insert Table 2 about here

Given that our finding for bipolarity rests on supporting the null hypothesis, we provide additional evidence using a multidimensional scaling (MDS) of the ratings.

Multidimensional Scaling of the Rating Data

Using the INDSCAL option of ALSCAL (Young & Levyckyj, 1979), trait polarity was measured by analyzing two 8 x 8 matrices of dissimilarities (the first employed ratings of construct and antonyms provided by a subject and the other used ratings provided by the subject's match.

Of primary interest is the location of constructs and antonyms in the MDS coordinate system. This yields information about word relations. Unipolarity would be supported by a single cluster of constructs and antonyms, while bipolarity would be supported by two clusters of words (constructs and antonyms) at opposite ends of a continuum. A two-dimensional solution accounted for these data. The horizontal axis of the stimulus configuration corresponds to a bipolar structure for constructs and their antonyms (as previously suggested by the MANOVA). The vertical axis, on the other hand, appears to represent an affective component for constructs, but not antonyms. Thus, as is suggested by the behavior generation findings, affect may underlie subjects' evaluations of accessible trait constructs.

Insert Figure 1 about here

Independence of Ratings and Behavior Generation

The difference between the polarity findings in the ratings and behavior generation portions can be clarified if the tasks could be shown to be unrelated. Average correlations were computed between the two sets of dependent measures and they do not correlate (r = .01).

Discussion

The results from this study about whether trait constructs are processed as bipolar or unipolar appears to be task contingent, as well as based, in part, on the evaluative nature of the considered traits.

Evidence supporting bipolarity is straightforward in the ratings task: Traits were as extremely rated, regardless of whether a construct or its antonym was being considered. In contrast, in the behavior generation task and only in the case of evaluatively positive categories, subjects generated more behaviors for constructs than for antonyms.

The difference between the two tasks may be linked to the amount of processing required. Whereas the ratings task may elicit a single dominant response, behavior generation may probe for less accessible information. For instance, when a subject is asked to rate the likelihood of liking, seeking out, disliking, or avoiding an individual with a given trait, only one exemplar need be generated and judgments can based on this one prototypic exemplar. A subject might do this with equal ease in response

to both poles of a dimension. However, if one pole is more elaborated in memory (as is likely to be the case for positively valenced trait constructs; e.g., Goldberg & Kilkovski, 1985; Srull & Wyer, 1979), then a task requiring subject to generate information may better discriminate between the two poles. Although a subject in the behavior generation task might be equally able to generate one behavior characteristic of each pole of a dimension, when pushed to generate as many as possible, the subject can identify relatively more behaviors characteristic of one pole of the dimension. Moreover, the valence of a given trait may also determine how elaborated the pole is, and thus, may account for the facilitative (or inhibitory) effects on subject's ability to generate multiple behaviors. Interestingly, these results on the effects of elaboration and mere thought parallel those reported by, for example, Tesser (1978), Linville (1982), and Judd and Lusk (1984) in attitude and social cognition research.

Additional research is needed to further specify issues raised in this study, as well as to explore possible individual differences in cognitive complexity (e.g., Green and Goldfried, 1965) and in task demands (cf., Craik & Tulving, 1975).

References

Anderson, J. R. (1983). The architecture of cognition. Cambridge, MA: Harvard University Press.

Bentler, P. M. (1969). Semantic space is (approximately) bipolar. Journal of Psychology, 71, 33-40.

Cohen, J. (1977). Statistical power analysis for the behavioral sciences (Rev. ed.). New York: Academic.

Collins, A. M., & Loftus, E. F. (1975). A spreading-activation theory of semantic memory. Psychological Review, 82, 407-428.

Craik, F. I. M., & Tulving, E. (1975). Depth of processing and the retention of words in episodic memory. Journal of Experimental Psychology: General, 104, 268-294.

Goldberg, L. R., & Kilkowski, J. M. (1985). The prediction of semantic consistency in self-descriptions: Characteristics of persons and of terms that affect the consistency of responses to synonym and antonym pairs. Journal of Personality and Social Psychology, 48, 82-98.

Green, R. F., & Goldfried, M. R. (1965). On the bipolarity of semantic space. Psychological Monographs: General and Applied (Vol. 79, No. 6, Whole No. 599).

Higgins, E. T., & King, G. (1981). Accessibility of social constructs: Information-processing consequences of individual and contextual variability. In N. Cantor & J. F. Kihlstrom (Eds.), Personality, cognition, and social interaction (pp. 69-121). Hillsdale, NJ: Erlbaum.

Higgins, E. T., King, G. A., & Mavin, G. H. (1982). Individual construct

accessibility and subjective impressions and recall. Journal of Personality and Social Psychology, 43, 35-47.

Judd, C. M., & Lusk, C. M. (1984). Knowledge structures and evaluative judgments: Effects of structural variables on judgmental extremity. Journal of Personality and Social Psychology, 46, 1193-1207.

Kelly, G. A. (1963). A theory of personality. New York: Norton.

Linville, P. W. (1982). Affective consequences of complexity regarding self and others. In M. S. Clark & S. T. Fiske (Eds.), Affect and cognition: The Seventeenth annual Carnegie symposium on cognition (pp. 79-107). Hillsdale, NJ: Erlbaum.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). The measurement of meaning. Urbana, IL: University of Illinois Press.

Srull, T. K., & Wyer, R. S., Jr. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. Journal of Personality and Social Psychology, 37, 1660-1672.

Tesser, A. (1978). Self-generated attitude change. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 11, pp. 289-338). New York: Academic.

Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. Journal of Personality and Social Psychology, 37, 395-412.

Wiggins, J. S., & Broughton, R. (1985). The interpersonal circle: A structural model for the integration of personality research. In R. Hogan & W. H. Jones (Eds.), Perspectives in personality (Vol. 1, pp.

1-47). Greenwich, CT: JAI Press.

Wyer, R. S., Jr., & Srull, T. K. (1981). Category accessibility and social perception: Some theoretical and empirical issues concerning the processing of social stimulus input. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), Social cognition: The Ontario symposium (Vol. 1, pp. 161-197). Hillsdale, NJ: Erlbaum.

Young, F. W., & Lewyckyj, R. (1979). ALSCAL user's guide (2nd ed.). Chapel Hill, NC: Data Analysis and Theory Associates.

Table 1.

Means for Constructs and Antonyms by Evaluative Category: Behavior Generation

	Like	Dislike	Seek Out	Avoid
Construct	7.88 ᵃ	7.21 ᵇ	8.28 ᵃ	7.34 ᵇ
Antonym	6.91 ᵇ	6.87 ᵇ	7.06 ᵇ	7.29 ᵇ

Note. Higher numbers indicate more examples of behaviors generated. Different superscripts within a column denote a statistically significant difference between means ($p < .001$).

Table 2

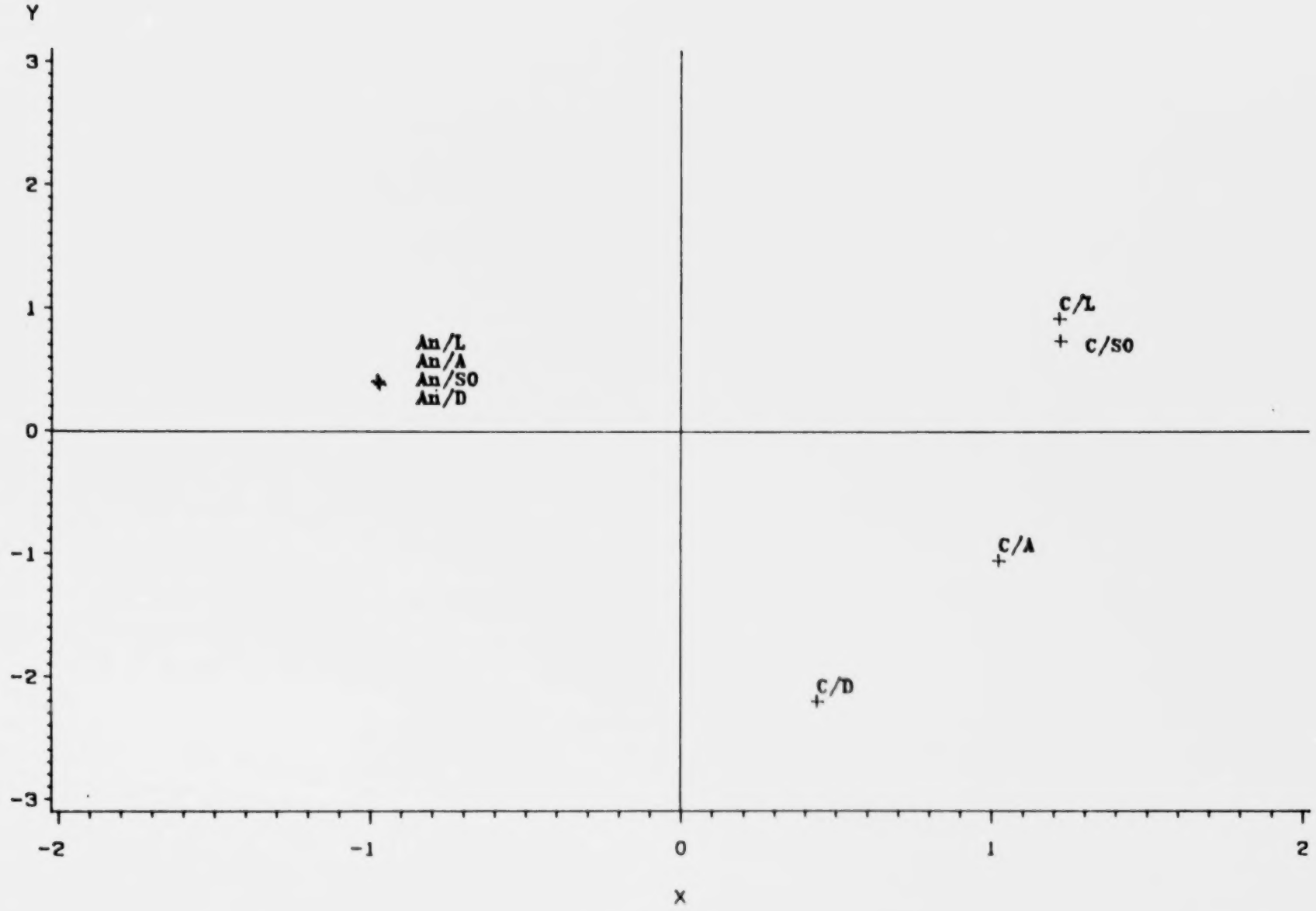
Means for Source by Evaluative Category: Ratings

	Like	Dislike	Seek Out	Avoid
Subject	0.26 ᵃ	0.08 ᵇ	-0.18 ᵃ	0.07 ᵇ
Match	-0.28 ᵇ	0.07 ᵇ	-0.43 ᵇ	0.15 ᵃ

Note. Positive numbers indicate more extreme ratings for constructs relative to their antonym. Different superscripts within a column denote a statistically significant difference between means ($p < .05$).

Figure Caption

Figure 1. Two-dimensional multidimensional scaling solution for trait construct ratings. Points are labelled in the form U/V where U is the semantic category (C = Construct; An = Antonym) and V is the evaluative category (L = Like; D = Dislike; SO = Seek Out; A = Avoid).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